



Published in final edited form as:

J Urban Health. 2005 September ; 82(3 Suppl 4): iv101–iv112. doi:10.1093/jurban/jti112.

Marginalized and socially integrated groups of IDUs in Hungary – potential bridges of HIV infection

V. Anna Gyarmathy, PhD, MS, MPH¹ and Alan Neaigus, PhD^{1,2}

¹*Institute for International Research on Youth at Risk, National Development and Research Institutes, Inc., New York, NY*

²*Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY*

Abstract

The discrepancy in HIV rates among Eastern and Central European injecting drug users (IDUs) suggests that, in addition to risk behaviors, social contact patterns also play an important role. We identify two groups of IDUs in Budapest, Hungary, marginalized IDUs (M-IDUs) and socially integrated IDUs (SI-IDUs), and compare their HIV/HBV/HCV social and risk network characteristics, risk behaviors, and travel patterns. Between 05/2003 and 01/2004, 29 non-treatment-recruited young IDUs in Budapest participated in ethnographic interviews and focus groups. The mean age was 23.6 years (SD=3.6); eight were female and two Roma/Gypsy. Most injected heroin (n=23) and/or amphetamines (n=10) in the past 30 days. M-IDUs had no legal employment, injected heroin and sniffed glue, and stopped using drugs in treatment/prison. SI-IDUs had regular jobs or were students, injected heroin and sniffed cocaine, and stopped using drugs before exams/tests. Both M-IDUs and SI-IDUs shared injecting equipment on occasion and used condoms rarely. M-IDUs had a large social network of “buddies” and a small risk network of “friends”. SI-IDUs had two separate large social networks of “buddies”: a M-IDU and a non-IDU network; and a small risk network of “friends”. Both groups reported monogamous sexual relationships. M-IDUs traveled within Hungary whereas SI-IDUs traveled to Western Europe. If an HIV epidemic among IDUs in Hungary is not prevented, SI-IDUs may form a potential “bridge” of HIV infection between high-risk IDU populations and the low-risk, general population, while M-IDUs may become cores of infection. Different approaches may be appropriate for M-IDUs and SI-IDUs to prevent HIV.

Keywords

Human immunodeficiency virus; Hepatitis B virus; Hepatitis C virus; injecting drug users; social marginalization; Central and Eastern Europe; risk behaviors; risk networks

Introduction

The decline of Soviet power and associated instability resulted in structural changes in the countries of Central and Eastern Europe. These structural changes in both society and culture largely contributed to a dramatic increase in injecting drug use among youth and young adults in the two regions.^{1–4} The epidemic of injecting drug use led to explosive HIV epidemics, especially among young IDUs, in parts of Eastern Europe, where in some cities about two thirds of injecting drug users (IDUs) are infected with HIV.²

While in the Eastern region of Europe (in countries of the former Soviet Union) HIV is spreading rapidly among young IDUs, in the Central European region (in the formerly Warsaw Pact, now new EU member countries), rates of HIV among IDUs are much lower (Figure 1).^{2,5-7} Hungary is typical of the majority of Central European countries in that it has low levels of HIV infection but a high prevalence of HCV (about 30%) and HBV (between 20–30%) among the IDU population.^{6,8-10} The widely spread HCV and HBV epidemic among IDUs in Hungary is a concern not only in and of itself, but also because it suggests that injecting and sex risk behaviors and risk networks among injecting drug users are very common.^{5,11,12} This implies that many of the conditions for an expansive and rapid HIV epidemic are present in the Central European region among young drug injectors.

The discrepancy in HIV rates between the Central and Eastern European regions suggests that in addition to risk behaviors, social contact patterns that influence the risk of exposure and epidemic spread also play an important role.¹³⁻¹⁵ Thus, it is important to investigate (potential) bridge groups and other network characteristics to try to predict and prevent an Eastern Europe-like HIV epidemic in Central Europe. In addition, examining travel patterns is an important aspect of studying the potential spread of infection in Europe, since travel to high HIV prevalence areas, e.g. Russia, may lead to direct exposure to HIV as well as to possible bridges of infection. The aims of this paper are to explore and describe the HIV/HBV/HCV risk network characteristics, risk behaviors, and travel patterns of young IDUs in Budapest, Hungary, and to assess the variation among IDUs by the extent of social marginalization.

Methods

Setting and participants

Between May 2003 and January 2004, young injecting drug users were recruited in various central districts in Budapest where many drug users congregate, as a part of a pilot study to explore HIV risk among young drug users in Budapest, Hungary. Sample recruitment was from non-treatment settings using a combination of targeted sampling, street outreach and chain referral methods.¹⁶ Participants were recruited from the needle exchange program, outdoors/street settings and through referral by participants already in the study. Eligible participants self-reported injecting drugs (heroin, cocaine, amphetamines or methamphetamines) at least once in the past 30 days and were 30 years of age or younger.^{2,6,7,17,18}

Screening methods to verify eligibility included visual inspection of the arms to detect recent injecting marks and urine tests for drug metabolites (heroin, cocaine, amphetamines and methamphetamines). Since the urine test only detects very recent drug use (in the previous 2–3 days), those who had negative urine test results for all drugs but who reported injecting drugs prior to the recent period and had recent injecting track marks were also admitted into the study. Age was verified with identification documents. Nobody refused to participate in the interviews. Participants were reimbursed for their time and effort of participating in the interviews and for recruiting their network members who were interviewed. All procedures involving human subjects were reviewed and approved by the Institutional Review Board at National Development and Research Institutes, Inc. and at the Hungarian Academy of Sciences.

Data collection

Eligible participants (N=29) provided their informed consents and participated in semi-structured in-depth interviews (n=20) or focus groups (n=9). The interview guide included questions about participants' drug use behaviors and practices; sexual risk behaviors and practices; social and risk networks; knowledge, attitudes, beliefs and peer norms regarding HIV, HBV, and HCV; deliberate risk reduction; and travel patterns and reasons for travel. In

addition, a short structured questionnaire was used to collect basic sociodemographic information (age, gender, cultural background [Hungarian vs. Roma/Gypsy] and homelessness) and basic drug use behavioral characteristics (age at first drug use, age at first drug injection, and drugs used and injected ever and in the past 30 days).

All interviews were voice recorded using a digital voice recorder. Interviews were then transcribed and data were extracted based on the a priori questions of interest.¹⁹ Then the data summaries were analyzed to identify key themes. A combination of direct quotes and paraphrases was used to capture the themes of the interviews. The data abstract reports were then reviewed by the Principal Investigator of the study (first author). Data collected using the short structured questionnaire were analyzed using SAS v8.

The interview guide was prepared in English and translated into Hungarian. All data collection, management and analysis protocols and analysis result summaries were written in both English and Hungarian. The first author, who is a Hungarian native speaker and fluent in both English and Hungarian, did much of the translation, and translation done by others was carefully reviewed by her for accuracy. All names in this report have been changed to protect the identity of the respondents.

Results

Description of the sample

The mean age of our participants was 23.6 years (SD=3.6) (Table 1). The majority (n=27, 93%) were ethnic Hungarians, and two (7%) were Roma; about one third were females (n=8, 28%). About one third were homeless (n=9, 31%). The average age of first illicit drug use was 15.7 years (SD=2.6), and the average age of first drug injection was 17.7 years (SD=3.1). The average number of years since first injection was 6.8 years (SD=2.7). In the past 30 days most of the participants injected heroin (n=23; 79%) and amphetamines (n=10; 35%); few injected prescription medications (mostly the benzodiazepine drug called Rivotril [Clonazepam or Klonopin], n=5, 17%), cocaine (n=3; 10%), street methadone (n=2; 7%), alcohol (n=2; 7%), other opiates (n=1; 3%), and other drugs (n=1; 3%). None indicated having injected crack or ketamine in the past 30 days.

Two groups of IDUs in Budapest

We found that IDUs in Budapest can be characterized into two groups: those who are *marginalized IDUs* (M-IDUs) and those who are *socially integrated IDUs* (SI-IDUs).

We defined *marginalized IDUs* as those who had (1.) no legal employment and (2.) mainly illegal sources of income (Table 2). M-IDUs were mostly homeless or squatters, and they had blue collar or working class family backgrounds. Several (n=4) reported having grown up in an orphanage. One reported dropping out of primary school after 5th grade, and eight reported having been educated only through 8th grade. Of the 20 ethnographic interview participants, ten (50%) could be characterized as marginalized. Of these, two were female and eight male.

Below, a M-IDU describes his situation:

“I finished five years of school... now I panhandle, that’s how I make money... I have been living in the street for two years now... My mother threw me out when I had police issues when I became a heroin addict.” (Mackó, 25-year-old male, M-IDU)

By contrast, *socially integrated IDUs* were (1.) either going to school or working full time or part time at legal or illegal but regular and well-paying jobs, and (2.) had a main source of income that was from their own regular (legal or illegal) jobs, student loans, or money from

their parents. SI-IDUs might engage in illegal activities, but they still had strong ties to conventional, socially integrated lives, such as living with parents or children, and going to school or working. Most SI-IDUs lived with their parents and/or their family, and had white collar or middle class family backgrounds. Of the six SI-IDU females, two were domestic partners living with a child, and both had their own elite commercial sex practices (i.e. they advertised themselves in local papers, had their own business phone numbers, had no pimps, reported that they required mandatory condom use by their clients, and underwent regular checkups and blood tests for, as they phrased it, “the sake of giving high-quality commercial sexual service”). Of the four SI-IDU males, one sold drugs and one reported occasional stealing.

As a SI-IDU describes his living situation:

“I live with my mother, or actually, in the next door apartment where my family lives, but she does my laundry and feeds me... My mother owns a few retail stores... I am very close to my mother... I sell grass, but not heroin. My mother knows, because I told her that I needed the money so that I can buy heroin without having to steal from her... I major in English and Communication at the university... I also make good money by translating for my mother’s company.” (Ákos, 20-year-old male, SI-IDU)

Risk behaviors

The two groups seem to have distinct drug use behaviors. *M-IDUs* inject heroin most of the time, and sniff glue and/or inhalants often (Table 2). They stop injecting drugs in drug treatment programs, which they enter when they want to stop using so that when they start using again they can get a better high, or when they are in prison. *SI-IDUs* inject heroin most of the time, and sometimes sniff cocaine, which is an expensive drug in Hungary. They stop using drugs “cold turkey” before exams or tests, although some reported switching to amphetamines during exam times to increase their ability to study.

On the other hand, their risk behaviors are similar: both M-IDUs and SI-IDUs report that they occasionally share syringes or needles and that they frequently share other injecting equipment. Furthermore, both M-IDUs and SI-IDUs report not using condoms with their sex partners.

“The last time I shot, it was heroin... I used to sniff glue, but I did not like that I smelled bad... I did not use anything when I was in prison... I shared needles with this *peasant* (meaning: ethnic Hungarian) kid... I don’t like condoms. I have used them maybe twice in my life.” (Józsi, 21-year-old male, Roma, M-IDU)

“I shoot heroin during the week, but not on the weekends, because that’s when I am at home with my parents... I don’t have withdrawal symptoms at all... I once shot after someone who may have been sick, but later I thought that was uncool because of infection risk, so I now have my own injecting set from the pharmacy... I often skip school, but I always make sure that I have the minimum number of classes that I need to pass and I take all the tests... I think it is a little too early, but my boyfriend wants to have children, so we don’t use condoms.” (Tünde, 18-year-old high school student, SI-IDU)

Risk networks

In the following, we compare three types of networks among M-IDUs and SI-IDUs: social networks, injecting networks, and sex networks. While these networks are identified based on the type of interaction between individuals within the network, membership may overlap: e.g., injecting partners may be sex partners as well (Table 2).

Social networks are comprised of *buddies* and *friends*. While both M-IDUs and SI-IDUs have large social networks of *other IDU buddies*, SI-IDUs have an additional social network of *non-*

IDU friends or buddies, mostly from school or members of their family. Both M-IDUs and SI-IDUs have small, stable (little turnover compared to the buddy networks) and dense social networks of one or two *friends*. The injecting networks of M-IDUs and S-IDUs are comprised of these very close friends. Thus, their injecting networks are small. Among both M-IDUs and S-IDUs, while males' injecting networks are comprised of their girlfriends and/or male best friends, females' injecting networks are usually dyads with their boyfriends (sex partners). However, while M-IDU females have other M-IDU injecting partner boyfriends, SI-IDU females have either M-IDU or SI-IDU boyfriends, suggesting that SI-IDU males do not select M-IDU females as sex partners and injecting partners. Both groups have monogamous, stable sexual relationships, mostly with other IDUs.

"I had a lot of childhood buddies whom I used "stuff" with... But most of my good friends died, and I have now maybe three and they are all in prison... I hang out only with Ági now... I shoot only after Ági... We have been together for a year now... Ági and I don't use condoms because I am only with her and she is only with me and nobody else." (Janó, 19-year-old male, M-IDU)

"There is a group of friends who don't even know that I use... And there is this other gang that I use heroin with... My best (male) friend and I moved together into a rented apartment. He also shoots heroin, and we use together... I have had four girlfriends in my life, serious, long-term relationships, and all shot heroin... (Péter, 28-year-old SI-IDU)

Travel patterns and reasons for travel

Neither M-IDUs nor SI-IDUs report that they travel frequently, and when they travel, they do not travel to high HIV prevalence areas, particularly to countries of the former Soviet Union. Overall, when M-IDUs or SI-IDUs travel, they do not report engaging in high-risk behaviors with any frequency. In terms of bridges of infection from travel, the risk is relatively low. Despite these similarities, many differences were found in their travel patterns.

M-IDUs report that they travel within Hungary and Budapest, usually with the aim of milking poppies in season (around May and September). They may also travel within the country to participate in residential drug treatment programs or to visit relatives. On the other hand, *SI-IDUs* report some (or in some cases extensive) travel abroad, almost exclusively to Western Europe. The reason for their travel abroad can vary. Women are usually sent abroad by their families, with the purpose of breaking off with a M-IDU lover. Many also travel for the purpose of working abroad, or getting into drug treatment programs abroad.

Below a focus group participant describes the phenomenon that they jokingly refer to as "country tourism", where IDUs (usually M-IDUs) travel to poppy fields to harvest poppy and make poppy tea, which they drink:

"When the poppy grows, then people leave. Poppy cutting season is at the end of May, but when the weather is good, there is another one at the end of August or the beginning of September... There are tons of poppies outside of Budapest, you don't even need to travel far." (focus group participant)

"We had a deal that she goes to Spain to visit her mother and get clean. I tried going after her, but they caught me in Malaga because of that pending police issue that I had, and threw me back to Hungary. I never saw her again." (Ferdinánd, 26-year-old M-IDU)

"After five years of using, my mother noticed it, so she sent me to Amsterdam for rehab. I was in Amsterdam for a year and a half, out of which two months were in rehab. I worked as a street musician for the rest of the time and only smoked weed." (Péter, 28-year-old SI-IDU)

Discussion

In this study, we identified two groups among IDUs in Budapest, Hungary – a marginalized and a socially integrated group. While there were several characteristics that were common among individuals in both groups (for example, sometimes sharing needles, rarely using condoms, and monogamous sexual relationships), there were differences in their drug use practices (the types of drugs used and reasons for stopping drug use), social and injecting risk networks, sex partner selection, and travel patterns.

Little turnover within injecting and sexual networks was found in this study. Our participants reported sharing syringes and other injecting equipment only with their closest network members, and only very rarely with those they did not know well, which is similar to the pattern often found in the US.¹⁵ However, in Russia, studies have found that about a quarter to a third of IDUs share with people whom they do not know at all or who they do not know well.² Furthermore, drug users in our sample in each group reported both having strong norms for monogamous sexual relationships and being monogamous in their relationships. This seems to differ from sex partner turnover among young IDUs found by some studies in the US and in Russia, where some young IDUs have more frequent turnover and/or concurrent partnerships in their sexual networks than do the young IDUs in Budapest that are reported on here.^{20–26}

We found the difference in how and why SI-IDUs and M-IDUs stop using drugs noteworthy, especially the role of being in drug treatment and incarceration among M-IDUs.²⁷ M-IDUs reported stopping injecting when in prison, which is consistent with our previous work among Hungarian inmates indicating little drug use and/or drug injecting in Hungarian prisons.²⁸ Our findings also reveal that drug treatment programs play an important role in the drug use patterns and thus the potential infection risk of Hungarian IDUs'. Thus, drug treatment programs offer a special and underutilized opportunity in Hungary to provide testing and counseling services to IDUs, especially M-IDUs, for HIV, HBV, other STIs, and HCV and to address not only injecting but also sexual risk of infection.²⁹ As several of our participants were recruited from the needle exchange, the connection between needle exchange services and drug treatment should also be utilized in prevention programs.^{30,31} It seems that SI-IDUs are more able than M-IDUs to self-regulate their drug use and stop using drugs altogether without any withdrawal symptoms when they feel it is necessary (e.g. around exams or tests). The question arises whether it is because they are socially integrated that they self-regulate their drug use, or whether it is because they are not as dependent on drugs and can self-regulate that they are socially integrated.

Our finding of injecting alcohol is noteworthy, since it is almost unheard of in the United States. The two individuals who reported having injected alcohol in the past 30 days in this study were two homeless, M-IDU males, who reported injecting poppy tea as well (one ever and one in the past 30 days), which all other participants viewed as “uninjectable”. During focus groups, participants also mentioned that when IDUs were unable to afford heroin to inject, sometimes they would inject just water (or anything else they viewed as “injectable”) in order to relieve withdrawal symptoms by performing the injecting ritual. As such, alcohol injection was viewed as something that “only really run down and desperate junkies would do”.

Several differences among M-IDUs and SI-IDUs suggests that socio-economic class and differential access to economic and social resources may play a role in marginalization.^{32, 33} For example, many of the SI-IDUs were from middle class families and were educated. In addition, M-IDUs' local travel patterns and SI-IDUs' international travel patterns may also be a reflection of material resources. On a macro-level, an increase in social marginalization among youth and young adults may have resulted from structural changes to the Hungarian economy and society that have occurred during the last several years, which have led to a

decline in employment opportunities in the industrial and government sectors of the economy. As in other areas of the world, such structural changes in societies may contribute to epidemics of drug use and an increase in HIV risk.³⁴

A limitation of the study is that due to the small sample size we were unable to identify the extent to which the IDU population in Budapest can be characterized into these groups and the extent to which there are degrees of marginalization or social integration among IDUs. With a larger sample size we may find that marginalization could indeed be viewed as a continuum, and that the marginalized and socially integrated groups seem to be representing two ends of a spectrum that may change over time. More research needs to be done to quantitatively identify these groups, for example, by using scales of social integration based on several background characteristics, and to assess the extent to which and the processes by which SI-IDUs may become marginalized, or M-IDUs may become socially integrated. Moreover, a larger-scale study may shed light on other aspects of IDUs that may be related to their degree of marginalization, including the length of time they have been injecting and their degree of drug dependence and frequency of drug injection – aspects that we were unable to fully explore due to the pilot nature of this study. Another limitation of the study is that we were able to recruit only two Roma participants, both from the needle exchange program. We hoped to be able to recruit through them other Roma IDUs, but they seemed more integrated with Hungarian IDUs and we were unable to tap into any Roma social or risk network through them. In future studies more emphasis needs to be added to developing collaborations with local Roma community-based organizations.¹⁹ Lastly, none of the participants in this study reported being MSM, thus we were unable to collect information about MSM IDUs.

The risk network and behavioral characteristics of these two groups of IDUs in Hungary have implications for the possible dynamics of potential sexual spread of HIV and HBV and injecting spread of HIV, HBV and HCV. For both groups, HIV has not yet entered the IDU population to any great extent. However, as we have seen in several countries and recently in the former Soviet Union, the HIV epidemic among drug users can appear as a sudden explosion.^{6,34} Thus, the current low HIV prevalence in Hungary may just be temporary. As such, it is important to investigate and model how HIV would be introduced and then spread so as to be able to control it in case of an outbreak. Furthermore, travel and migration of IDUs, particularly to and/or from areas where HIV is highly prevalent among IDUs, and mixing patterns, may also influence the introduction and spread of HIV among Hungarian IDUs and their sex partners.^{35–37} If an HIV epidemic among IDUs in Hungary is not prevented, due to their intermediate status, SI-IDUs may form a potential “bridge” of HIV infection between high-risk IDU populations and the low-risk, general population, while M-IDUs may become core groups of infection.

The segmentation of the IDU population in Hungary into marginalized and socially integrated groups raises the question whether or not different intervention approaches may be used to prevent HIV, HBV and HCV.¹⁴ Network interventions have been often used in preventing HIV infection among injecting drug users, and have proved effective in reducing high-risk behaviors.^{38–43} Among M-IDUs, network interventions that utilize their closely knit network structures to change peer culture may be an appropriate approach in the near term, although, in the longer-term the goal should be to reduce the negative health and behavioral outcomes of their drug use and enable their social reintegration. Among SI-IDUs, interventions that may work better would be those that increase the positive influence of non-IDUs, which would build upon their already existing non-IDU social networks.¹⁴ However, since both groups can be characterized by high levels of unprotected sex, any intervention among IDUs in Hungary has to have a strong component aimed at the prevention of sexual risk. Future research using epidemiological survey methods should assess differences in injecting and sexual risk behaviors and networks among these groups and the extent of mixing between the groups, and

utilize these findings in culturally appropriate interventions to prevent HIV and other blood borne and/or sexually transmitted infections among young IDUs and their sex partners.

Acknowledgements

The study was sponsored by the National Institute on Drug Abuse, grant R03 DA15313 “Young Drug Users and HIV Risk in Budapest, Hungary”. We would like to thank our field staff in Hungary, our collaborators Dr. Eszter Ujhelyi and Dr. József Rácz, and the participating drug users for sharing their stories with us. Tímea Szabó provided valuable assistance in analyzing the data.

References

1. Atlani L, Carael M, Brunet JB, et al. Social change and HIV in the former USSR: the making of a new epidemic. *Soc Sci Med* 2000;50:1547–1556. [PubMed: 10795962]
2. Kelly JA, Amirkhanian YA. The newest epidemic: a review of HIV/AIDS in Central and Eastern Europe. *Int J STD AIDS* 2003;14:361–371. [PubMed: 12816662]
3. Benotsch EG, Somlai AM, Pinkerton SD, et al. Drug use and sexual risk behaviours among female Russian IDUs who exchange sex for money or drugs. *Int J STD AIDS* 2004;15:343–347. [PubMed: 15117506]
4. Amirkhanian YA, Kelly JA, Kabakchieva E, et al. Evaluation of a social network HIV prevention intervention program for young men who have sex with men in Russia and Bulgaria. *AIDS Educ Prev* 2003;15:205–220. [PubMed: 12866833]
5. Hamers FF, Downs AM. HIV in central and eastern Europe. *Lancet* 2003;361:1035–1044. [PubMed: 12660072]
6. European Centre for the Epidemiological Monitoring of AIDS. HIV/AIDS surveillance in Europe, mid-year report 2003. Saint Maurice: Institute de Veille Sanitaire; 2003.
7. Rhodes T, Ball A, Stimson GV, et al. HIV infection associated with drug injecting in the newly independent states, eastern Europe: the social and economic context of epidemics. *Addiction* 1999;94:1323–1336. [PubMed: 10615718]
8. European Monitoring Centre for Drugs and Drug Addiction. Annual report on the state of the drugs problem in the European Union and Norway 2002. Luxembourg: Office for Official Publications of the European Communities; 2002.
9. Ujhelyi E, Tarjan V, Szomor K, et al. Prevalence of HIV, HBsAg, and HCV infection among Hungarian drug users. *Int Conf AIDS*. 1998abstract no. 60099
10. Zacher, G. Drogútadagolások - fővárosi helyzet. In: Ritter, I.; Felvinczi, K., editors. Jelentés a magyarországi kábítószerhelyzetről. Budapest: Gyermek, Ifjúsági és Sportminisztérium; 2003.
11. Stark K, Sieroslawski J, Muller R, et al. Determinants of current HIV risk behaviour among injecting drug users in Warsaw, Poland. *European Journal of Epidemiology* 1996;12:315–317. [PubMed: 8884201]
12. Mikl J, Vyslouzilova S, Bruckova M, et al. High rate of HIV risk behaviors among drug users in Prague, Czech Republic 1996-7. *Int Conf AIDS*. 1998abstract no. 23197
13. Trotter RT II, Bowen AM, Potter JM Jr. Network Models for HIV Outreach and Prevention Programs for Drug Users. *NIDA Research Monograph* 1995;151:144–180. [PubMed: 8742765]
14. Neaigus A. The network approach and interventions to prevent HIV among injection drug users. *Public Health Rep* 1998;113:140–150. [PubMed: 9722819]
15. Neaigus A, Friedman SR, Curtis R, et al. The relevance of drug injectors' social networks and risk networks for understanding and preventing HIV infection. *Social Science and Medicine* 1994;38:67–78. [PubMed: 8146717]
16. Sifaneck S, Neaigus A. The ethnographic accessing, sampling and screening of hidden populations: Heroin sniffers in New York City. *Addict Res & Theory* 2001;9:519–543.
17. Dehne KL, Khodakevich L, Hamers FF, et al. The HIV/AIDS epidemic in Eastern Europe: recent patterns and trends and their implications for policy-making. *AIDS* 1999;13:741–749. [PubMed: 10357372]

18. Sejda J, Studnickova B, Polanecky V. Trends in the incidence of problematic drug addicts in the Czech Republic, 1995–1996. *Central European Journal of Public Health* 1998;6:18–24. [PubMed: 9524737]
19. Kelly JA, Amirkhanian YA, Kabakchieva E, et al. Gender roles and HIV sexual risk vulnerability of Roma (Gypsies) men and women in Bulgaria and Hungary: an ethnographic study. *AIDS Care* 2004;16:231–245. [PubMed: 14676028]
20. Sherman SG, Latkin CA. Intimate relationship characteristics associated with condom use among drug users and their sex partners: a multilevel analysis. *Drug Alcohol Depend* 2001;64:97–104. [PubMed: 11470345]
21. Booth RE. Gender differences in high-risk sex behaviours among heterosexual drug injectors and crack smokers. *Am J Drug Alcohol Abuse* 1995;21:419–432. [PubMed: 8561095]
22. Montgomery SB, Hyde J, De Rosa CJ, et al. Gender differences in HIV risk behaviors among young injectors and their social network members. *Am J Drug Alcohol Abuse* 2002;28:453–475. [PubMed: 12211360]
23. Booth RE, Mikulich-Gilbertson SK, Brewster JT, et al. Predictors of self-reported HIV infection among drug injectors in Ukraine. *J Acquir Immune Defic Syndr* 2004;35:82–88. [PubMed: 14707797]
24. Gore-Felton C, Somlai AM, Benotsch EG, et al. The influence of gender on factors associated with HIV transmission risk among young Russian injection drug users. *Am J Drug Alcohol Abuse* 2003;29:881–894. [PubMed: 14713145]
25. Somlai AM, Kelly JA, Benotsch E, et al. Characteristics and predictors of HIV risk behaviors among injection-drug-using men and women in St. Petersburg, Russia. *AIDS Educ Prev* 2002;14:295–305. [PubMed: 12212716]
26. Rhodes T, Judd A, Mikhailova L, et al. Injecting equipment sharing among injecting drug users in Togliatti City, Russian Federation: maximizing the protective effects of syringe distribution. *J Acquir Immune Defic Syndr* 2004;35:293–300. [PubMed: 15076245]
27. Alcabas P, Vlahov D, Anthony JC. Characteristics of intravenous drug users by history of arrest and treatment for drug use. *J Nerv Ment Dis* 1992;180:48–54. [PubMed: 1311371]
28. Gyarmathy VA, Neaigus A, Számádó S. HIV risk behavior history of prison inmates in Hungary. *AIDS Educ Prev* 2003;15:561–569. [PubMed: 14711168]
29. Gyarmathy VA, Racz J, Neaigus A, et al. The urgent need for HIV and hepatitis prevention in drug treatment programs in Hungary. *AIDS Educ Prev* 2004;16:276–287. [PubMed: 15237056]
30. Vlahov D, Junge B, Brookmeyer R, et al. Reductions in high-risk drug use behaviors among participants in the Baltimore needle exchange program. *Journal of the Acquired Immune Deficiency Syndromes* 1997;16:400–406.
31. Vlahov D, Junge B. The role of needle exchange programs in HIV prevention. *Public Health Rep* 1998;113:75–80. [PubMed: 9722812]
32. Galea S, Vlahov D. Social determinants and the health of drug users: socioeconomic status, homelessness, and incarceration. *Public Health Rep* 2002;117:S135–S145. [PubMed: 12435837]
33. Buka SL. Disparities in health status and substance use: ethnicity and socioeconomic factors. *Public Health Rep* 2002;117:S118–S125. [PubMed: 12435835]
34. Rhodes T, Stimson GV, Crofts N, et al. Drug injecting, rapid HIV spread, and the 'risk environment': implications for assessment and response. *AIDS* 1999;13:S259–S269. [PubMed: 10885783]
35. Steffen R, deBernardis C, Banos A. Travel epidemiology--a global perspective. *Int J Antimicrob Agents* 2003;21:89–95. [PubMed: 12615369]
36. Des Jarlais DC, Carballo M. HIV and injecting drug use. *AIDS Soc* 1993;4(5):11–12.
37. Gezairy HA. Travel epidemiology: WHO perspective. *Int J Antimicrob Agents* 2003;21:86–88. [PubMed: 12615368]
38. Latkin CA, Sherman S, Knowlton A. HIV prevention among drug users: outcome of a network-oriented peer outreach intervention. *Health Psychol* 2003;22:332–339. [PubMed: 12940388]
39. Latkin CA, Hua W, Davey MA. Factors Associated with Peer HIV Prevention Outreach in Drug-Using Communities. *AIDS Educ Prev* 2004;16:499–508. [PubMed: 15585427]

40. Latkin CA, Mandell W, Vlahov D, et al. The long-term outcome of a personal network-oriented HIV prevention intervention for injection drug users: The SAFE Study. *American Journal of Community Psychology* 1996;24:341–364.
41. Latkin CA. A personal network approach to AIDS prevention: an experimental peer group intervention for street-injecting drug users: the SAFE study. *NIDA Res Monogr* 1995;151:181–195. [PubMed: 8742766]
42. Latkin CA. Outreach in natural settings: the use of peer leaders for HIV prevention among injecting drug users' networks. *Public Health Rep* 1998;113:151–159. [PubMed: 9722820]
43. Padian NS, O'Brien TR, Chang Y, et al. Prevention of heterosexual transmission of human immunodeficiency virus through couple counseling. *J Acquir Immune Defic Syndr* 1993;6:1043–1048. [PubMed: 8340895]



Figure 1. HIV infections newly diagnosed among injecting drug users, per million population, WHO European Region, cases reported in 2002

Source: EuroHIV. HIV/AIDS Surveillance in Europe. Mid-year report 2003. Saint-Maurice: Institute de Veille Sanitaire, 2003. No. 69.

Table 1

Description of the sample

Characteristics	N (%)
Total	29 (100)
Age - mean (SD)	23.6 (3.6)
Cultural background	
Hungarian	27 (93.1)
Roma	2 (6.9)
Gender	
male	20 (69.0)
female	8 (27.6)
Homeless	9 (31.0)
Age at first illicit drug use	15.7 (2.6)
Age at first drug injection	17.7 (3.1)
Years since first injection	6.8 (2.7)
Drugs injected in the past 30 days	
heroin	23 (79.3)
amphetamines	10 (34.5)
prescription medications	5 (17.2)
cocaine	3 (10.3)
street methadone	2 (6.9)
alcohol	2 (6.9)
other opiates	1 (3.4)
other drugs	1 (3.4)

Table 2
Marginalized and socially integrated IDUs in Budapest

Marginalized	Socially integrated
<u>Description</u>	
Without legal employment	School/job
Mainly illegal income	Salary/student loan/parents
<u>Background</u>	
Homeless/squatters	Live with parents/family
Blue collar/working class family	White collar/middle class family
<u>Drug use behaviors</u>	
Inject heroin	Inject heroin
Sniff glue/inhalants	Sniff cocaine
Stop drugs in rehab when need better high or in prison	Stop drugs "cold turkey" when exams/tests
Occasional sharing of syringes/needles, frequent sharing of other equipment	Occasional sharing of syringes/needles, frequent sharing of other equipment
<u>Sexual behaviors</u>	
No use of condoms	No use of condoms
<u>Social networks</u>	
Large network of <i>buddies</i>	Two types of large networks:
* IDUs (M or SI)	* mostly M-IDU drug <i>buddies</i>
	* non-IDU <i>friends/buddies</i> , mostly from school/family
<u>Injecting networks</u>	
Small, homogeneous and dense injecting networks, little turnover	Small, homogeneous and dense injecting networks, little turnover
* One or two <i>friends</i>	* One or two <i>friends</i>
- Men: male <i>best friends</i> (M or SI)	- Men: male <i>best friends</i> (M or SI)
- Women: <i>boyfriends</i> (M)	- Women: <i>boyfriends</i> (M or SI)
<u>Sex networks</u>	
Monogamous, stable sexual relationships	Monogamous, stable sexual relationships
<u>Travel patterns and reasons for travel</u>	
Travel within Hungary/BP	Travel abroad – West Eu
* To milk poppy in season	* Break off with M-IDU lover for women
* Rehab or relatives	* Work
	* Rehab abroad